The origin of coke ovens in Japan

Registration No.	Number 00304		
Registration Date	September 14, 2021	Registration Category	Category 2

Name (Model, etc.)	The First Coke Oven Batteries with Vertical Heating Flues built in Japan, designed by Dr. Kageyoshi Noro
Location	Kamaishi-shi, Iwate
	NIPPON STEEL CORPORATION East Nippon Works Kamaishi Area
Owner (Custodian)	NIPPON STEEL CORPORATION East Nippon Works (landowner)
Manufacturer (Company)	Kamaishi Mine Tanaka Ironworks
Year Manufactured	1893 (construction begins) — 1894 (construction completed)
Year first appeared	1984
Reason For Selection	In a blast furnace, coke, ores, and flux (limestone) are continuously supplied through the top of the furnace, while a hot blast of air is blown into the lower section of the furnace providing hot reducing gas passing upward, so that the chemical reactions take place throughout the furnace as the material falls downward. Smooth current of gas is realized by packing state of coke. This recent excavation reveals the remains of a coke oven designed by Noro based on his studies in Europe, featuring an advanced design with separate carbonization and combustion chambers. Noro's coke oven was tailored to suit the domestic coal with high-volatility characteristic. The oven also made use of domestic bricks in place of expensive imports, and these were found to have sufficient fire resistance and capacity stability to withstand repeated thermal stress cycles. Noro's coke oven has tremendous significance as the first domestic oven, which influenced all that followed including the Kuroda type coke oven, even the SCOPE21(Super Coke Oven for Productivity and Environmental enhancement toward the 21st century).
Registration Standard	1-B (Show a uniquely Japanese scientific or technological development from an international perspective.) 1-D (Constitute a landmark in terms of regional development.)

Open/Closed to Public	Closed to Public

Photo

Photographs

Excavated remains

Other useful information	